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and biological therapy in our patients from April 1, 2020. Prevention of infection when encountering a new, deadly, and highly transmissible infectious organism requires caution and respect for the entity.

Low doses of the steroid prednisolone (20 mg) have been suggested as a treatment for patients with IBD and COVID-19.<sup>4</sup> Although we agree with Fiorino and colleagues that the risk of disease recurrence and negative outcomes might be increased due to stopping immunosuppressive therapy, many of these medications have a long wash-out period<sup>5</sup> and disease recurrence was not substantially increased in our cohort in the short term.

We agree with Segal and colleagues that inherent differences exist between western populations and eastern populations, including in the prevalence of IBD. The social media platform WeChat is near ubiquitous in China; the multiple platforms in use elsewhere might help in managing patient communications.

Local guidelines and isolation measures should be dictated by the background incidence of COVID-19 in the community. A great many unknowns remain and the situation is still dynamic. We will continue to monitor our patients closely during the follow-up period for flares of disease activity and complications of switching medications, including restarting patients on their original biological therapy.

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## Wastewater monitoring of SARS-CoV-2: lessons from illicit drug policy

Researchers are starting to use wastewater analysis to detect severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) in communities.<sup>1,2</sup> In a recent Correspondence in *The Lancet Gastroenterology & Hepatology*, Willemijn Lodder and Ana Maria de Roda Husman argued that “wastewater surveillance, especially in areas with a scarcity of data, might be informative”.<sup>2</sup> Although wastewater analysis might seem to be a helpful early warning tool to inform rapid response, there are lessons to be learned from other fields about the promises and pitfalls of this method.

We have analysed how wastewater analysis is used for illicit drug policy decision making, and the social and ethicopolitical effects of this method in this context.<sup>3,4</sup> Wastewater analysis promises near ‘real-time’ and ‘accurate’ data on illicit drug consumption in specific geographical locations. As with SARS-CoV-2, it is assumed that ‘real-time’, ‘accurate’ data generated by wastewater analysis would make a difference to policy decision making and allow governments to responsively

intervene in local areas. We have learned that this expectation is not necessarily the case. Although wastewater analysis can provide a snapshot of drug concentration overall, the method is blind to the complex social dynamics that shape drug harms and the transmission of viruses such as hepatitis C and HIV. Contextual information about patterns of drug use, routes of administration, and demographic characteristics of people who use drugs is essential for directing appropriate and effective drug policy interventions in specific communities.

We must consider more than the mere technical capabilities of wastewater analysis and examine the opportunities and limitations of this method for informing policy decision making and intervention. Although wastewater analysis might provide early warning of localised SARS-CoV-2 outbreaks, it cannot account for dynamic population patterns or the specific social and behavioural practices that give rise to outbreak events. This knowledge is crucial for effective intervention. We know from past outbreaks, including from Ebola, that interventions can generate ill effects, even precipitating community resistance to viral control.<sup>5</sup> Without evidence that understands the social and contextual aspects of virus transmission, and how communities are responding to (or resisting) interventions, effective responses are not possible. Wastewater analysis is a limited tool for informing action. It might tell us where SARS-CoV-2 is present, but not how best to intervene.

We declare no competing interests.

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## Screening FMT donors during the COVID-19 pandemic: a protocol for stool SARS-CoV-2 viral quantification

We read with interest the Correspondence by Christopher Green and colleagues<sup>1</sup> suggesting the need for a molecular test to screen faecal microbiota transplant (FMT) donors

for severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) to prevent the potential risk of transmission. On March 12, 2020, the US Food and Drug Administration (FDA) issued safety alerts because of a death caused by transmission of drug-resistant *Escherichia coli* bacteraemia via FMT.<sup>2</sup> With more than 1 million people infected by SARS-CoV-2, screening policies for FMT donors should be stringent and scientifically validated. The presence of SARS-CoV-2 (including live virus) in stool of asymptomatic individuals implies that coronavirus disease 2019 (COVID-19) might be transmitted via the faecal route.<sup>3,4</sup> Development of stool tests has been slow, since real-time RT-PCR of respiratory samples is typically used to confirm the diagnosis of COVID-19.

At the time of writing, the FDA recommends that only FMT products generated from stool donated before Dec 1, 2019, should be used until proper testing and screening protocols are available.<sup>5</sup> As described by Green and colleagues,<sup>1</sup> the University of Birmingham Microbiota

Treatment Centre (Birmingham, UK) is not actively processing new donors until a validated SARS-CoV-2 stool test is available. The FMT centre at the Chinese University of Hong Kong (Hong Kong) is one of the largest providers of FMT in Asia and is the sole provider of FMT to the Health Authority of Hong Kong. Although the first case of COVID-19 was reported in Hong Kong on Jan 22, 2020, we quarantined all donor material donated since Nov 1, 2019, from use. We developed a screening protocol that combines a questionnaire to identify donors who might be at risk of SARS-CoV-2 infection with an RT-PCR assay for detecting SARS-CoV-2 in donor stool. The assay (panel) allows SARS-CoV-2 viral quantification with a 3 h turnaround. We validated the assay in 81 stool samples from 21 confirmed SARS-CoV-2 cases and 114 stool samples from 114 asymptomatic non-infected individuals who had returned from high-risk areas. As per the diagnostic protocol of our local health authority, all COVID-19 cases had been confirmed by two RT-PCR tests targeting different regions of the *RdRp* gene in respiratory specimens. All 21 confirmed cases had positive stool tests (median two stool samples positive for SARS-CoV-2 per patient; viral load 2.9–7.1 log<sub>10</sub> copies per mL). No stool samples from the 114 asymptomatic individuals tested positive for SARS-CoV-2.

We found that a single negative test, as in the current practice for screening other pathogens, is insufficient to exclude the presence of SARS-CoV-2 in stool. We recommend testing donors at multiple timepoints during the donation period, since the level of viral RNA present in stool can fluctuate around the margin of laboratory detection. Testing stool for SARS-CoV-2 should be done in appropriately equipped laboratories by trained staff; specimen handling would require biosafety level 2 laboratories or equivalent facilities.

### Panel: Protocol for SARS-CoV-2 viral quantification in stool samples

#### Stool collection and viral DNA extraction

- Collect stool in sterile plain bottles
- Suspend 0.1 g stool in 1 mL viral transport medium (in 1:10 dilution)
  - Centrifuge at 4000 g for 20 min
  - 140 µL aliquot of filtrate for following work
- Extract viral RNA using spin column-based extraction method
  - Kit example: QIAamp Viral RNA Mini Kit (Qiagen, Hilden, Germany), PureLink Viral RNA/DNA Mini Kit (ThermoFisher Scientific, Waltham, MA, USA)

#### SARS-CoV-2 viral load quantification

- SARS-CoV-2 RNA quantified using RT-quantitative PCR with following settings:
  - Primer-probe set N1
    - 2019-nCoV\_N1-F: 5'-GAC CCC AAA ATC AGC GAA AT-3'
    - 2019-nCoV\_N1-R: 5'-TCT GGT TAC TGC CAG TTG AAT CTG-3'
    - 2019-nCoV\_N1-P: 5'-FAM-ACC CCG CAT TAC GTT TGG TGGACC-BHQ1-3'
  - Cycling conditions
    - One cycle: 25°C for 2 min, 50°C for 15 min, 95°C for 2 min
    - 45 cycles: 95°C for 15 s and 55°C for 30 s

#### SARS-CoV-2 RT quantitative PCR data analysis

- Samples are considered negative if cycle threshold values exceeded 39.9 cycles
- Detection limit of real-time RT-PCR is 347 copies per mL

SARS-CoV-2= severe acute respiratory syndrome coronavirus 2.

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